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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/944,123	09/04/2001	Takayuki Tanaka	2001-1230A	1763
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513 7590 11/05/2003

WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

MENEFEE, JAMES A

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,123

Applicant(s)

TANAKA, TAKAYUKI

Examiner

James A. Menefee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

In response to the amendment filed 9/2/2003, claims 1-15 are cancelled, claims 16-31 are added, and the specification is amended. Claims 16-31 are pending.

Drawings

The substitute drawing sheet was received on 9/2/2003. This sheet is acceptable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakano (previously cited US 6,292,497). Nakano discloses the claimed invention as follows, the entire document is relevant:

Regarding claim 16, Nakano discloses a laser diode drive circuit comprising a laser diode 81 that emits light based on a current, an adjustment circuit 1 operable to generate a first voltage according to an amount of light emitted by said laser diode and to store a first voltage value based on the first voltage, and a temperature compensation circuit that generates a second

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voltage according to an ambient temperature, to generate a third voltage based on the first and second voltages and to adjust the current based on the third voltage.

Regarding claim 17, there is further a control device 1 that regularly updates the first voltage value in the adjustment circuit.

Regarding claim 18, degradation compensation is achieved for the laser diode by changing a modulation current flowing through the laser to match the level of the light output power from the laser diode to the light output power data value stored in memory.

Regarding claim 19, the temperature compensation circuit regularly updates the first voltage value stored in the adjustment circuit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano.

The limitations are taught as in the 102 rejection above, except Nakano does not disclose that the driving system is used in an optical transmission system. However, it is extremely well known that lasers are often used in optical transmission systems. It would have been an obvious engineering design choice to use this specific laser system as the laser system in an optical transmission system.

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Claims 20-26 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano in view of Salter et al. (previously cited US 4,355,395).

Regarding claims 20 and 26, Nakano discloses the limitations of the claim as in the rejection of claim 1 above. It is not disclosed that an amplitude detection circuit comprises a bottom detector, a peak detector, and a differential amplifier. Salter discloses a drive circuit including such elements 24-28. It would have been obvious to one skilled in the art to include such elements in the drive circuit as they will keep the output levels of the laser stable, as taught by Salter. These elements will inherently provide the additional voltages required by the claims.

Regarding claims 21-23 and 25, the limitations are disclosed as in the above 102 rejections. There is further a memory 50 that stores the first voltage value.

Regarding claim 24, Nakano discloses the extinction ratio compensation is achieved by changing the DC bias current through the laser based on the light output level in memory.

Regarding claims 29-31, the limitations are taught as in the rejection of claims 20-22 above, except it is not disclosed that the driving system is used in an optical transmission system. This is deemed obvious for the reasons given in the rejection of claims 27-28 above.

Response to Arguments

Applicant's arguments filed 9/2/2003 have been fully considered but they are not persuasive.

Applicant repeatedly argues that Nakano fails to show a third voltage based on the first and second voltages, where the current is adjusted based on the third voltage. The Examiner disagrees. Nakano provides the first voltage, from circuit 1, based on the light emitted by the

laser. Nakano provides the second voltage, stored in memory 50 based on the temperature sensor 10, and temperature compensation circuit 10,20,50. The third voltage is generated in Nakano to control the laser diode based on these first and second voltages. Current controllers 40 and 41 each provide currents based on these first and second voltages. These will adjust the currents I_{ac} and I_{dc} . With the adjusting of these currents, the current will be adjusted at the node directly below the LD 81 (above Q2, below the LD, directly to the right of the number "81" in Fig. 2). This third current at this node, and its inherently corresponding third voltage, are adjusted, thus the current to the laser is adjusted.

Applicant argues that "Nakano fails to teach a temperature compensation current." The Examiner contends a temperature compensation current is shown including at least temperature sensor 10, converter 20, and memory 50.

Regarding additional voltages four through six of the other claims, it is believed that with the combination of Nakano and Salter, then the additional elements of Salter will provide additional voltages as claimed. Regardless of how the applicant labels the voltages of the system, first voltage, second voltage, etc., it is believed that the combination of Nakano and Salter shows all voltages as claimed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (703) 605-4367. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JM
October 29, 2003



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